BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Savoy

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Produced in 2004

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

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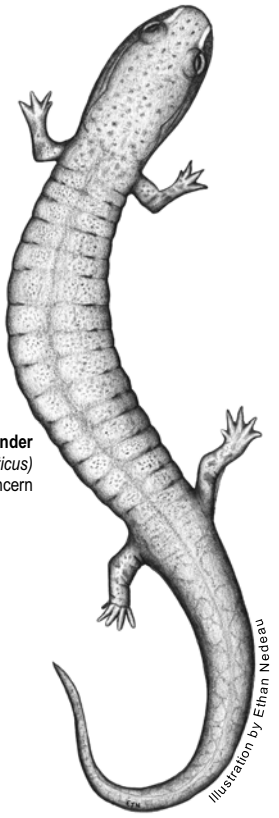
* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.

Natural Heritage & Endangered Species Program

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For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

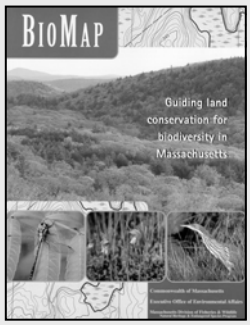
Introduction

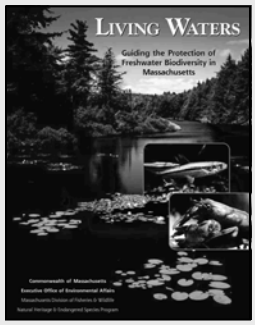
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Savoy

Core Habitat BM173

Natural Communities

Common Name	Scientific Name	Status
Acidic Rocky Summit/Rock Outcrop Community		Secure
High-Energy Riverbank		Vulnerable
High-Terrace Floodplain Forest		Imperiled
Northern Hardwoods - Hemlock - White Pine Forest		Secure
Rich, Mesic Forest Community		Vulnerable

Plants

Common Name	Scientific Name	Status
Autumn Coralroot	*Corallorhiza odontorhiza*	Special Concern
Bartram's Shadbush	*Amelanchier bartramiana*	Threatened
Crooked-Stem Aster	*Symphotrichum prenanthoides*	Threatened
Large-Leaved Sandwort	*Moehringia macrophylla*	Endangered
Michaux's Sedge	*Carex michauxiana*	Endangered
Mountain Alder	*Alnus viridis ssp crispa*	Threatened
Nodding Pogonia	*Triphora trianthophora*	Endangered
Northern Bog Violet	*Viola nephrophylla*	Endangered
Shore Sedge	*Carex lenticularis*	Threatened
Thread Rush	*Juncus filiformis*	Endangered
Woodland Millet	*Milium effusum*	Threatened

Invertebrates

Common Name	Scientific Name	Status
Beaver Pond Clubtail	*Gomphus borealis*	Special Concern
Early Hairstreak	*Erora laeta*	Threatened
Orange Sallow Moth	*Rhodoecia aurantiago*	Threatened

Ski-Tailed Emerald	*Somatochlora elongata*	Special Concern
Twelve-Spotted Tiger Beetle	*Cicindela duodecimguttata*	Special Concern

Vertebrates

Common Name	Scientific Name	Status
American Bittern	*Botaurus lentiginosus*	Endangered
Bat Hibernaculum		----------
Blackpoll Warbler	*Dendroica striata*	Special Concern
Spring Salamander	*Gyrinophilus porphyriticus*	Special Concern

Core Habitat BM428

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM429

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM451

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM452

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

BioMap: Species and Natural Communities

Savoy

Core Habitat BM485

Plants

Common Name	Scientific Name	Status
Bristly Black Currant	*Ribes lacustre*	Special Concern

Vertebrates

Common Name	Scientific Name	Status
Jefferson Salamander	*Ambystoma jeffersonianum*	Special Concern

Core Habitat BM493

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM506

Natural Communities

Common Name	Scientific Name	Status
Spruce-Fir Boreal Swamp		Vulnerable

Core Habitat BM509

Natural Communities

Common Name	Scientific Name	Status
Spruce-Fir Boreal Swamp		Vulnerable

Core Habitat BM517

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

BioMap: Core Habitat Summaries

Savoy

Core Habitat BM173

This Core Habitat contains a large, unfragmented mixed forest of deciduous and evergreen trees. It includes much of the Cold River and its tributaries with steep-sided riverbanks, and encompasses old-growth forest. These high-quality habitats support a wide array of rare insect species, including those of moths, butterflies, tiger beetles, and dragonflies. The area is also important for several rare plant species, and includes one of the state's few Nodding Pogonia populations. The Core Habitat provides an overwintering area for bats, includes significant habitat for Spring Salamanders, as well as wetland habitats for American Bitterns.

Natural Communities

This Core Habitat contains a large, unfragmented Northern Hardwoods-Hemlock-White Pine forest. Northern Hardwoods-Hemlock-White Pine Forests have a mix of evergreen and deciduous trees, with a closed, full canopy, and sparse shrub and herbaceous layers. They commonly occur on north facing slopes and ravines with moderately acidic soils. This natural community type is commonly found across Massachusetts, although it is too often a victim to fragmentation and development. Large tracts of this forest type are important for the protection of many of Massachusetts' more common species such as bear, deer, moose, and neo-tropical migrant birds. This Core Habitat also contains an excellent High-Energy Riverbank along the entire Cold River. High-Energy Riverbank communities are sparse, open graminoid communities found on cobble and sand deposits along fast-flowing rivers that experience severe flooding and ice scour. Here much of the riverbank is pristine, inaccessible, and surrounded by old-growth forest.

Plants

This Core Habitat contains several important rare plant populations. Here grows one of the state's few populations of the rare and elusive Nodding Pogonia, which only blooms for one or two days each year. A very large and vigorous population of Woodland Millet, a delicate grass, is growing here as well. Along water bodies, the state's largest occurrences of Shore Sedge are found, as well as a few populations of Mountain Alder.

Invertebrates

This Core Habitat includes a large area of undeveloped and relatively unfragmented habitat for a variety of rare insect species, including the Early Hairstreak butterfly, which inhabits Northern Hardwoods Forest with a complement of Beech; the Orange Sallow moth, a species of dry, open woodlands along ridgetops where its larval host False Foxgloves grows; the Twelve-spotted Tiger Beetle, which inhabits riverbanks along the Deerfield River; and rare dragonflies such as the Beaver Pond Clubtail and the Ski-tailed Emerald, which are species of slow-flowing streams, ponds, and lakes. Many of the rare insect species inhabiting this Core Habitat also inhabit a Core Habitat in Hawley (less than 10 km to the southeast), which probably allows for occasional dispersal of insects between these two areas. In addition, this Core Habitat is located less than 5 km from a Core Habitat in the Mount Greylock State Reservation and vicinity, which probably allows for occasional dispersal of Early Hairstreak butterflies between these two areas.

Vertebrates

This Core Habitat contains extensive, connected sections of high-gradient cold brook habitats and headwater seeps that provide significant habitat for Spring Salamanders. Wet meadow and shallow marsh habitat near Tannery Pond and south along Parker Brook provide habitat for American Bitterns and other wetland birds. This Core Habitat also includes upland forest habitat around the entrance to an underground bat hibernaculum (overwintering area). Large portions of this Core Habitat are protected as conservation land within State Forests, but important sections that link larger blocks of conservation land are, at present, unprotected.

Core Habitat BM485

This Core Habitat encompasses upland forests and wetlands along Drowned Land Brook that support Jefferson Salamanders, as well as rare plants such as the Bristly Black Currant.

Plants

Growing within a cold, swampy forest of this Core Habitat is the Bristly Black Currant, a low shrub and a Species of Special Concern.

Vertebrates

This Core Habitat encompasses riparian wetlands and upland mixed forest along five miles of Drowned Land Brook and Savoy Hollow Brook in Savoy and Windsor. Areas of mature upland forest as well as shrub and forested wetlands provide significant habitat for Jefferson Salamanders. Most of this Core Habitat is not protected as conservation land.

Core Habitat BM506

Natural Communities

This Core Habitat contains part of a Spruce-Fir Boreal Swamp that occurs along Phelps Brook. Spruce-Fir Boreal Swamps are forested wetlands dominated by Red Spruce and Balsam Fir. These swamps are typically found at stream headwaters or in poorly drained basins in the mountainous, northwestern part of the state. This swamp is well-buffered by forested land that has been recently logged. Although disturbances were noted in the surrounding forest, no exotic invasive plant species occur within the swamp.

Core Habitat BM509

Natural Communities

This Core Habitat contains part of a Spruce-Fir Boreal Swamp that occurs along Phelps Brook. Spruce-Fir Boreal Swamps are forested wetlands dominated by Red Spruce and Balsam Fir. These swamps are typically found at stream headwaters or in poorly drained basins in the mountainous, northwestern part of the state. This swamp is well-buffered by forested land that has been recently logged. Although disturbances were noted in the surrounding forest, no exotic invasive plant species occur within the swamp.

Living Waters: Species and Habitats

Savoy

Core Habitat LW002

Fishes

Common Name	Scientific Name	Status
Longnose Sucker	*Catostomus catostomus*	Special Concern

Core Habitat LW135

Fishes

Common Name	Scientific Name	Status
Bridle Shiner	*Notropis bifrenatus*	Special Concern

Core Habitat LW153

Exemplary Habitats

Common Name	Scientific Name	Status
Lake/Pond Habitat		----------

Core Habitat LW254

Plants

Common Name	Scientific Name	Status
Farwell's Water-Milfoil	*Myriophyllum farwellii*	Endangered

Core Habitat LW301

Plants

Common Name	Scientific Name	Status
Farwell's Water-Milfoil	*Myriophyllum farwellii*	Endangered

Fishes

Common Name	Scientific Name	Status
Longnose Sucker	*Catostomus catostomus*	Special Concern

Living Waters: Species and Habitats

Savoy

Core Habitat LW302

Invertebrates

Common Name	Scientific Name	Status
Appalachian Brook Crayfish	*Cambarus bartonii*	Special Concern

Fishes

Common Name	Scientific Name	Status
Longnose Sucker	*Catostomus catostomus*	Special Concern

Core Habitat LW355

Exemplary Habitats

Common Name	Scientific Name	Status
Fish Habitat		----------
Invertebrate Habitat		----------

Fishes

Common Name	Scientific Name	Status
Bridle Shiner	*Notropis bifrenatus*	Special Concern
Lake Chub	*Couesius plumbeus*	Endangered
Longnose Sucker	*Catostomus catostomus*	Special Concern

Living Waters: Core Habitat Summaries

Savoy

Core Habitat LW002

This Core Habitat in Dry Brook and its tributaries supports the Longnose Sucker, a fish Species of Special Concern. This species is restricted to the western watersheds of Massachusetts, where it is found in cold, clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker sometimes migrates many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age. Protecting the riparian areas adjacent to this Core Habitat will help maintain the cool, clean freshwater habitat of the Longnose Sucker.

Core Habitat LW135

Tannery Pond and its associated inlets and outlets support one of only two known population of Bridle Shiner in the Deerfield Watershed. This fish Species of Special Concern has a small range from southern New England to South Carolina, and has been declining or extirpated in much of the region. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes.

Core Habitat LW153

South Pond is an acidic pond located at a higher elevation in the Savoy Mountain State Forest. As such, the pond may experience slightly pronounced seasonality and support more boreal species of invertebrate and plants relative to ponds at lower elevations. This area provides habitat for rare dragonflies, which can be indicators of high quality aquatic habitats.

Core Habitat LW254

Bog Pond supports one of the state's only populations of Farwell's Water-Milfoil, an Endangered aquatic plant species. Native freshwater plants like Farwell's Water-Milfoil are an important component of aquatic ecosystems, providing habitat and nutrition for fishes and invertebrates, and adding oxygen to the water through photosynthesis.

Core Habitat LW301

This Core Habitat is centered on the Deerfield River, and extends into the Chickley River and its tributaries, the lower portion of Cold River and its tributaries, and into Pelham Brook and its tributaries, all the way north to Pelham Lake. Pelham Lake is a naturally acidic lake that, along with its outlet, contains one of the state's only known populations of the Endangered Farwell's Water-Milfoil. Native freshwater plants like Farwell's Water-Milfoil are an important component of aquatic ecosystems, providing habitat and nutrition for fishes and invertebrates, and adding oxygen to the water through photosynthesis.

The rest of this Core Habitat supports the Longnose Sucker, a fish Species of Special Concern. This species is restricted to the western watersheds of Massachusetts, where it is found in cold,

clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker sometimes migrates many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age. Protecting the riparian areas adjacent to this Core Habitat will help maintain the cool, clean freshwater habitat needed by the Longnose Sucker.

Core Habitat LW302

This Core Habitat is centered on the Hoosic River in Adams, and extends upstream into Tophet Brook and its tributaries, as well as into Pecks Brook and its tributaries. These freshwater habitats support the Longnose Sucker, a fish Species of Special Concern. This species is restricted to the western watersheds of Massachusetts, where it is found in cold, clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker sometimes migrates many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age.

Pecks Brook and its tributaries also provide habitat for the Appalachian Brook Crayfish, a Species of Special Concern. This secretive crayfish is restricted to the Hoosic River Watershed in Massachusetts, where it tunnels under large rocks and boulders in hillstreams. Pecks Brook reaches into some of the highest elevations on Mount Greylock of any hillstreams known to support this species. Potential threats to the Appalachian Brook Crayfish include competition from introduced, non-native crayfish species as well as habitat degradation from damming or development in the adjacent riparian areas.

Core Habitat LW355

This Core Habitat stretches more than 30 miles, encompassing the East Branch of the Westfield River and many of its tributaries from Huntington to Savoy. These freshwater habitats are among the best in the state for fishes and aquatic insects.

The fish communities here are indicative of cold, clean, rocky habitats with flowing waters. For example, a section of the Westfield River in Chesterfield supports a community of Blacknose Dace, Common Shiner, Longnose Dace, Slimy Sculpin, White Sucker, and Lake Chub. These fishes require clean cobble and gravel substrates for spawning and are dependent on fast flowing waters. In a section of Westfield Brook in Cummington, the fish community reflects a relatively small, cold, moderately flowing stream with clean rocky substrates. The fish community it supports is diverse; it consists of Blacknose Dace, Creek Chub, Common Shiner, Brook Trout, Longnose Dace, Slimy Sculpin, White Sucker, Lake Chub, and Bridle Shiner.

The state-Endangered Lake Chub can be found along this Core Habitat, which is one of only two sites in the state that supports this species. This fish requires moderate- to fast-flowing, clear, cold streams with gravel and rubble substrates. In the spring, this species may move large distances to spawn (breed). Excess sediments can degrade the clean gravel needed for spawning and proper egg development. Increases in sediments cloud the water and impair this

species' visual feeding.

Another rare fish, the Longnose Sucker, is found in the East Branch of the Westfield River and its tributaries in the Cummington-Windsor area. This fish Species of Special Concern is restricted to the western watersheds of Massachusetts, where it is found in cold, clean, oxygen-rich streams with gravel bottoms. The Longnose Sucker may also migrate many miles to reach its spawning grounds. The eggs are released over the gravel bottom, making them susceptible to excess sedimentation, flow alterations, and increases in water temperature. These habitat degradations can be particularly detrimental to the reproductive success of this slow-growing fish that does not reach maturity until 5 to 7 years of age.

A third rare fish species, the Bridle Shiner, is found in a section of Westfield Brook in Cummington. This is the only known population of Bridle Shiner in the Westfield Watershed. This fish Species of Special Concern has a small range from southern New England to South Carolina, and has been declining or extirpated in much of the region. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes.

This Core Habitat also provides excellent habitat for aquatic invertebrates. The area includes habitat for several species of state-listed dragonflies and damselflies, from the mainstem of the river up to the small, acidic headwater streams. The Little River also supports a healthy community of the more ecologically sensitive aquatic insects: mayflies, stoneflies, and caddisflies. The naturally vegetated streambanks help maintain the habitat quality, shading the water to keep it cool and controlling the runoff of sediments, excess nutrients, and water. Sections of this Core Habitat are already protected, but protecting the remaining riparian areas along the Westfield River and its tributaries will aid in maintaining the integrity of these excellent freshwater habitats.

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Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
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To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.